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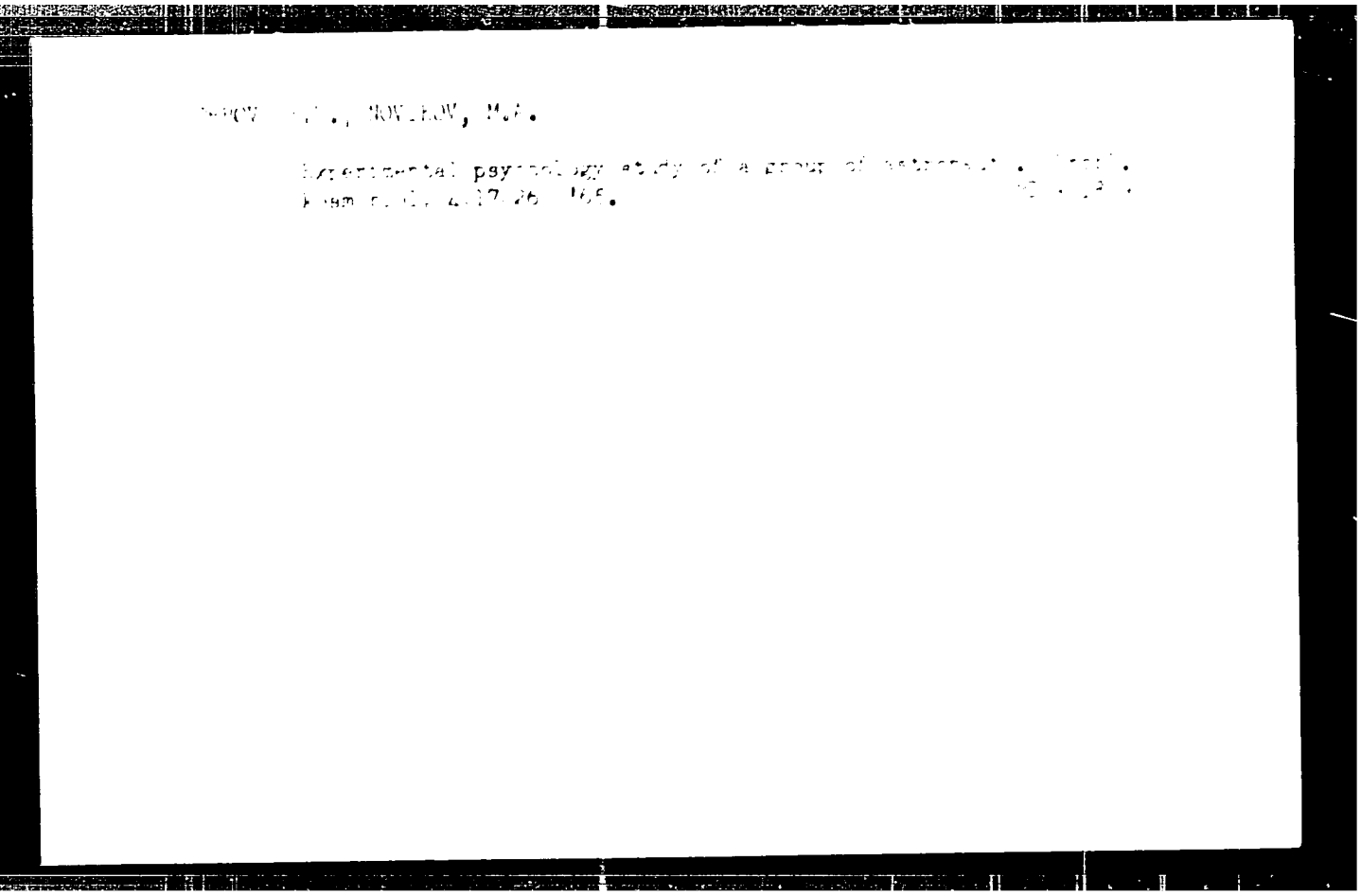

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L 31152-66 RD

ACC NR: AT6003836 SOURCE CODE: UR/2865/65/004/000/0017/0026

AUTHOR: Gorbov, F. D.; Novikov, M. A.

ORG: none

TITLE: Experimental psychological testing of cosmonaut teams

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy kosmicheskoy biologii, v. 4, 1965, 17-26

TOPIC TAGS: cosmonaut training, cosmonaut selection, Rorschach test, space psychology, psychologic stress, space flight simulation, behavior pattern

ABSTRACT: Because of the enormous speed of spaceflight, many ordinarily unnoticed, insignificant factors become psychophysiological stressors with potentially serious consequences. Flight conditions which act as psychological stressors are: 1) the continuous nature of flight activity; 2) the rigorous sequence of operations required by flight programs; 3) time-deficit conditions; 4) "remoteness" of sensory functions (all information, even about one's own body position, available only at second hand from instruments); 5) "postural" factors (i.e., disruption of "seat-of-pants" orientation by alteration or absence of gravity forces); 6) the "novelty"

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factor (tension induced by novel conditions); and 7) reduced afferentation (due to weightlessness, isolation, and noise impeding perception of instrument and communications signals). The importance of all these factors as stressors became known through study of the reactions to them of inadequately trained personnel.

Functional tests are of great importance in eliminating unsuitable cosmonaut candidates and enhancing resistance in the candidates chosen, since a high level of functional capacity is required to resist various known and predicted factors. Functional tests have proven effective both in uncovering hidden pathologies and in eliminating personnel with inadequate psychopathological characteristics.

An experimental battery of test stressors modeling one or another factor of dangerous or unreproducible situations (e.g., plane crashes) was devised in consultation with experienced air crews. The first step in this work was to isolate the psychological factors and to devise rigorously reproducible methods for studying them.

A single psychological factor—suggestibility—will be taken as an example. Suggestibility was studied experimentally by determining indi-

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vidual electrophysiological characteristics during assimilation of rhythms (rhythmical light stimulation, Livanov stimulation, and trigger stimulation) in conjunction with hypnopedia. In addition, "tandem" verbal experiments revealing the "leader" and the "led" members of each pair of subjects were used. These were supplemented by Rorschach tests and by Uglov's placebos in conjunction with standardized drug tests.

Group studies were also undertaken, to elucidate the mechanisms of cooperation and teamwork. The concept of strategy is basic in considering the behavior of groups and of individual members of groups. The work of the sociometrists (Moreno) was rejected as reactionary and mystical, and that of the group dynamicists (Levin's hierarchical approach) as too rigid (since it regards the subordination of one link to another as predetermined and unalterable for all sets of circumstances in which the group may find itself).

The studies of group behavior followed two main lines of investigation: 1) psychological aspects of pilot interaction during interdependent activity, and 2) psychological aspects of cohabitation under complex conditions of prolonged group isolation. Both lines of study included investigation of psychophysiological compatibility and functional subordination, and evaluation of the integrative behavior of the group.

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Psychophysiological compatibility is based on community of interests, aims, needs, and the absence of pronounced egocentric tendencies. In addition, people living in close proximity and engaging in intensive activity are affected by mutual suggestion and induction, imitation, and reciprocal syntony. Experimental observations were based on verbal and behavioral reactions and psychoemotional manifestations. Compatibility was characterized by isodirectionality not only of external behavioral reactions of the subjects, but also of their physiological indices during periods of intensive activity and emotional stress. Harmonious teamwork was characterized by the imposition by one subject of his response reactions on the others, and by isodirectionality of pulse variations with a high (0.65) coefficient of correlation. Unharmonious team activity was marked by the absence of mutually imposed behavior and a low correlation of autonomic reactions.

The integrative action of the group was studied by the "homeostat," a device similar in principle to the "cooperative four-man showerbath" recently created in a Moscow health institute. This showerbath is so designed that four persons bathing simultaneously can obtain sufficient quantities of near-comfortable water only by cooperating. "Egocentric" behavio

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directed at obtaining more than one's share prompts the other bathers to make adjustments, which automatically cause the offender to be drenched with icy or scalding water. The conditions of the "game" demand a "conflict strategy" of cooperation.

The homeostat consists of a device for modeling and solving problems of various degrees of difficulty, controlled by three or four interconnected inputs of equal strength. Work indices of each operator are automatically recorded and the dynamics of his activities evaluated during the experiment, making it possible to discern and follow the formulation of individual strategies. Problems of all degrees of complexity were used, from very simple ones solved in seconds to very difficult ones which were beyond the powers of the group. Although the subjects learned to solve the problem, they could not usually describe the processes by which they had done so. When the group failed to solve a problem, one of its members would be replaced by a laboratory worker familiar with homeostat operation. Once this group, including the laboratory worker, had succeeded in solving the problem, the group as originally constituted (with the absent member restored) was also able to solve the problem, as though the original failure had been due to inability on the part of the absent member. Just how this learning transfer (lab worker to group and group to absent member) takes place is also unclear.

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In solving integrative problems, the choice of individual strategies reflects psychologically subordinate interaction and functional subordination within the group. Group problem solving is generally characterized by differences in the contribution of each subject to the solution. Almost always one subject can be identified as directing the general strategy of the group, while the other members involuntarily and even unconsciously defer to his leadership. Apparently functional subordination is an essential feature of group activity, but it does not follow from this that the "leader" of a group during one type of activity will remain the leader if a different activity is substituted. The stability of subordinative interrelations must be evaluated by subsequent behavior of the group in new integrative test situations.

The types of interaction discussed are compared to Sherrington's funnel concept of the competition of reflexes for a final common path. In the latter situation the effector system occupying the path does not entirely displace other systems; there occurs rather a game-type interaction, in which the weight and influence of each effector system changes at the moment of reaction. Something similar occurs when an experimental group engaged in interdependent activity moves from problems of a given complexity to problems of a different degree of complexity. Each of the subjects, who are

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functioning in a sense as complex efferent systems, changes his output, his strategy during the period of activity. This analogy is not claimed to be complete, and the authors do not regard the activity of several subjects interconnected through the homeostat as a model of the interrelations between pyramidal, extrapyramidal, and purely segmental effects of the forward process of the spinal cord on the effector systems of the extremities. Nonetheless, in complex systems composed of equivalent interconnections, the immediate effects of the removal of one element may be general in character. Orig. art. has: 2 tables. [ATD PRESS: 4091-F]

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L 6337-67 EWT(1) SCTB GD/GD

ACC NR: AT6036683 SOURCE CODE: UR/0000/66/000/000/0384/0385

AUTHOR: Chesalin, L. S; Dmitriyev, N. Ye.; Gorbov, F. D.; Novikov, M. A.; Ushakov, V. I.

ORG: none

TITLE: A device for studying interdependent group activity (two to eight operators) /Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24-27 May 1966/

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 384-385

TOPIC TAGS: group dynamics, cosmonaut training, cosmonaut selection, space psychology

ABSTRACT: In 1963, two of the authors described a device which could be used to evaluate the behavior of a group of three men during interdependent activity. It was shown that the device could reflect the activity of the group with great accuracy and that evaluation results agreed with some sociological tests despite its simplicity of design. Consequently, a device which could evaluate the interdependent activity of a group of eight men

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was constructed. It consists of eight small, identical panels each consisting of a dial and potentiometer. The experimenter is provided with a large panel consisting of 8 dials which act as doubles of the individual ones. In addition, he has a device indicating the sum of the deviations of all the dials from zero. There are switches permitting exchange between all potentiometers and dials on a second section of the panel.

After standardizing an exchange coefficient, the experimenter feeds current to the subjects' dials. They in turn attempt to reset the dial on zero according to instruction. Each subject sees only his own dial which he himself can only manipulate. When interexchange coefficients are not equal to zero, the problem has an interdependent nature in that all remaining dials move, besides that of the individual subject; each individual dial reflects the disposition of all the potentiometers. This set-up is portable, fitting into two carrying cases and is powered by 4 batteries (40 mamp).

From preliminary experiments it was found that a number of basic situations common to a three-man group are not encountered in the larger, eight man group. The presence of a leader, or group of leaders is perhaps necessary. The device can be used to execute commands, break a group down into separate subgroups, and for a number of other experi-

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ments. It seemed desirable to construct special biorecording systems, which could be used in concert with this set-up.

Finally, a reference formula determining the dial reading on the i panel αi (i = 1, 2,...v) is given:

$$L_i = \sum_{k=1}^{n} a_{ik} x_k$$

Here, x_K is the deviation from zero of the potentiometer on the k panel and a_i is the coefficient of the influence of the k potentiometer on the dial. The sum of indicator readings are:

$$a_\Sigma = \sum_{i=1}^{n} \delta_i |a_i|$$

Here δ_i equals zero or one and indicates the position of the additional switch on the panel, which permits the exclusion of some of the dials from the total. [W. A. No. 22; ATD Report 66-116]

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L 11365-67 EWT(1) SCTB DD/GD

ACC NR: AT6036510 SOURCE CODE: UR/0000/66/000/000/0083/0085

AUTHOR: Bystritskaya, A. F.; Novikov, M. A.

ORG: none

TITLE: Experimental study of the dynamics of conflict [Paper presented at conference on problems of space medicine held in Moscow from 24-27 May 1966]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 83-85

TOPIC TAGS: cosmonaut training, cosmonaut selection, group dynamics, space psychology

ABSTRACT:

In studies conducted by F. D. Gorbov's laboratory, the development of conflict strain characterized by lowered learning capacity has been noted during interdependent activity. It is felt that conflict is one of the causes of inadequate group learning capacity. To confirm this an experiment designed to study the characteristics and causes of conflict during group activity was conducted.

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To obtain a model of group activity which would definitely cause conflict, the "Homeostat" device was used, and called the "Blind-legless" in this system. Each subject receiving information from his own dial can only indirectly react to it because of his influence on his partner's dial.

To create an incompatible (mathematical) condition, the experimenter fed a dissonant signal to each dial. During the process of investigation, it was observed that external conflict was far more effective when the system was almost in equilibrium. The experiment was conducted in two phases: first, instruction and habit formation took place; second, dissonant signals were introduced during the solution of a problem. The sum of the modules of operator—activity parameters and the autonomic reactions of the subjects during solution of a problem were recorded. From 2 to 51 subjects making up 27 experimental groups participated.

The results for the experiment demonstrated that introducing a dissonant signal during the near stabilization of the system caused conflict strain accompanied by neurotic reactions, which were reflected in disruption of the dynamic stereotype down to the loss of the habit and preclusion of solution; shifts in behavioral reactions and shifts of an emotional-autonomic

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nature were also observed. Conflict reactions could be divided into two groups. The first group, made up of the majority of the experimental groups, showed a premominance of behavioral reactions marked by emotional and speech dissipation and inadequate attentiveness. These subjects indulged in voice communications with themselves and with their experimenter despite instruction. The second group, consisting of nine of the experimental groups, was characterized by autonomic shifts, muscular strain (grasping the control lever), a sharp increase in the background of high amplitude fluctuations in skin galvanic responses, and changes in respiratory rhythm (increased or decreased respiration), and increased or decreased pulse.

The types of behavior shown by the subjects provide the basis for considering the two types of conflict as diffuse and local. The diffuse type of conflict, where selection of an object for conflict solution does not occur and subjects reject further experimentation, is characteristic of a predominance of autonomic shifts. The second group of subjects blames the conflict either on the partner or the device, e. g., implication of the partner or device in the conflict realm takes place.

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The described conflict conditions occurrring during the multiple introduction of dissonant signals are apparently due to the assimilation of signals closely resembling a useful signal into an "anticipation pattern". This data can be considered in light of the research of P. K. Anokhin concerning neurosis in animals resulting from the disagreement of the real with the desired purpose of activity. [U.A. No. 22; ATD Report 66-116]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

ACC NR: AT6036516 SOURCE CODE: UR/0000/66/000/000/0094/0095

AUTHOR: Vasil'yev, V. K.; Gorbov, F. D.; Novikov, M. A.; Savvin, A. B.; Tantiyev, Yu. Z.

ORG: none

TITLE: Investigation of the possibility of creating a conflict situation during interdependent cooperative pilot teamwork by means of mathematical modeling [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 94-95

TOPIC TAGS: mathematical model, group dynamics, space psychology, cosmonaut training, homeostasis

ABSTRACT: In recent years the "man-machine" problem has commanded increasing attention. Two trends have emerged from investigations devoted to this problem: the first involves a study of a possible optimum relationship between the operator and the machine; and the second considers the solution to mission-oriented problems by the operator. The majority of experiments have been devoted to the characteristics of one operator inter-

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acting with a mechanical system. However, the operator teamwork is of special interest.

The "homeostat" device makes it possible to conduct experimental tests on an operator participating in a team and receive quantitative data which can be used to construct a mathematical model of their interdependent activity.

Present information indicates that during the solution of "difficult" problems on the homeostat, there is a division of responsibility among the operators necessary for fullfilling the mission. Therefore, the possibility exists of constructing a heuristic model from experimental data by considering the differentiated nature of different operator tasks in one group or another.

Two approaches to studying operator tactics on the homeostat can be demonstrated; a) operator performance in a nonconflicting situation where the problem can be solved; b) operator performance in a conflicting situation where the problem cannot be solved. The latter approach is of special interest in selecting special, mission-oreinted groups (space-flight teams, expeditionary groups etc.).

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A mathematical model was constructed reflecting the operation of the homeostat in standard regime (static model). Based on this model, it is possible to select exchange-coefficient values corresponding to a predetermined conflicting or nonconflicting situation. Some data have been obtained on the dynamic characteristics of operators during teamwork. [M. A. No. 22; ATD Report 66-116]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

ACC NR: AT6036536 SOURCE CODE: UR/0000/66/000/000/0129/0130

AUTHOR: Gorbov, F. D.; Novikov, M. A.; Bystritskaya, A. F.; Gerasimovich, A. A. Karova, M. A.

ORG: none

TITLE: Homeostatic principle in modeling group activity [Paper presented at the Conference on Problems of Space Medicine held in Moscow from 24 to 27 May 1966.]

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii, Moscow, 1966, 129-130

TOPIC TAGS: homeostasis, cosmonaut training, cosmonaut selection, group dynamics, space psychology

ABSTRACT: Investigations conducted on the "Homeostat" model using 3 operators have demonstrated the importance of using the principle of group-integrative evaluation. The effectiveness of a group can not be prognosed by individual criteria; the success of the solution is determined not only by the activity of each operator, but by the nature of group interaction. An understanding of group strategy as a whole and the tactics of individual operators is of great importance. The strategy of a group must change

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during a deepening interrelationship. The parity principle of group activity becomes authoritarian; here, a distribution of functional obligations is revealed ("leader-led" type). This permits isolating functional subordination in an interacting group. The quantitative characteristics of operator tactics according to value and the correlation coefficient of visual and motor aspects of activity were found.

The depth of intercommunications can be used as a criterion of the development (organization) of a group. It was found that a joint but unsolvable problem is a source of conflict strain in a group (this was noted in a group with low learning capacity). The evolution of conflict was concluded to be a function of individual psychological idiosyncracy and the complication of situations at a given moment. [W. A. No. 22; ATD Report 66-116]

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.A., inzh.

Dynamics of the gearing mechanism in electric railway motors.
Sbor. LIIZHT no.158:197-208 '58. (MIRA 11:6)
(Electric railway motors) (Gearing)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.A.

Composition of soil air in peat-bog soils. Pochvovedenie no.2:58-68 F '62. (MIRA 15:3)

1. Belorusskiy nauchno-issledovatel'skiy institut melioratsii i vodnogo khozyaystva.
(Gases in soils) (Peat soils)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, Moisey Borisovich (Astrakhan State Medical Institute) for Doctor of Medical Sciences on the basis of the dissertation defended 3 March 1958 in the Council of the Riga Medical Institute, entitled: "Intrauterine Development of the Liver of Man". (MVISSO USSR, 2-61, 20)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.B.

Development of the mesonephros in man. Dokl. AN SSSR 139 no. 3:767-768 Jl '61. (MIRA 14:7)

1. Predstavleno akademikom A.N. Bakulevym.
(Wolffian body)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.D., inzh.

Designing the regenerator for a gas turbine installation with a variable mode of operation. Teploenergetika 7 no.6:36-38 Je '60. (MIRA 13:8)

1. Nevskiy mashinostroitel'nyy zavod.
(Gas turbines)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

S/096/60/000/009/[illegible]
E194/E484

AUTHOR: Novikov, M.P., Engineer

TITLE: The Optimum Ratio of the Equivalent Diameters of Counter-Flow Regenerators of Gas Turbine Sets

PERIODICAL: Teploenergetika, 1960, No.9, pp.63-65

ABSTRACT: A counter-flow regenerator is smaller, lighter [illegible] a mixed flow regenerator. Two important problems in the [illegible] of counter-flow regenerators are the arrangements for delivery and removal of gas and air and also determination of the ratio of the equivalent diameters of the gas and air [illegible]. The relationship between the total heating surface and the ratio of equivalent diameters has a minimum point, provided that the total pressure drop and degree of regeneration are constant. Accordingly, there is an optimum ratio of equivalent diameters for a given degree of pressure increase in the gas turbine set. This question of ratio is also important because it affects the possibility of standardizing the regenerators for gas turbines of different compression ratios. A method is then given to determine the optimum ratio of equivalent diameters and the necessary equations for the heating surface of the regenerator. [illegible] and 1/5

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The Optimum Ratio of ... /E484

relative pressure loss of gas or air ζ are taken from the author's earlier article in Teploenergetika, 1960, No.6, and equations are derived for the total pressure drop and the total section for gas and air. On the basis of these formulae the following expression ...

$$F = K_1 K_4 \left[\ldots \right]$$

[illegible]

... is the heating surface of the regenerator ...

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The Optimum Ratio of

by weight of working medium T is the mean temperature of the working medium in the regenerator in °K [illegible] is the degree of regeneration b is a coefficient of proportionality [illegible] is the exponent of the Reynolds number in the heat transfer equation [illegible] is the relative loss of pressure of gas or air K_2 is a coefficient entering into the expression for the loss of pressure K_3 is a constant factor that includes both K_1 and K_2 r is the exponential of the Reynolds number in the pressure loss equation [illegible] is the resistance factor of the tube bundle to gas or air H is the length of the tube bundle to gas or air p is the pressure of gas or air the suffix [illegible] relates to gas and the suffix B relates to air The method of using Eq [illegible] is briefly explained Abstractor's note The original uses the symbol twice but in slightly different type Calculations were made for a plate type counter-flow regenerator of given design for which Eq (7) assumes the following form

$$F = [illegible]^{-3} + 1.11\sigma^{-2.0.382} [illegible]^{+1.382} + 1.04$$

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The Optimum Ratio of

The results of the calculations are plotted in the [illegible] Fig 1 which shows the optimum ratio of equivalent diameters [illegible] for various compression ratios π in a gas turbine. Fig 2 shows the relationship between the heating surface F/F_{om} of a regenerator and the divergence of the equivalent diameters from the optimum φ/φ_{om}. Fig 3 shows the relationship between the heating surface of the regenerator F/F_{om} and the compression ratio π of a gas turbine when [illegible]. Fig 4 shows that the optimum diameter ratio of the gas to the airways varies from about 2.7 when the compression ratio of the gas turbine varies from 1 to 12. Fig 2 shows that reduction in the optimum up to 50% increases the heating surface by 10% at [illegible] figure. It is concluded that in designing a generator [illegible] type a single value of the ratio of equivalent diameters [illegible] used for gas turbines with a wide range of compression ratios because the deviation of the values from the optimum [illegible] cause great increase in the heating surface. Moreover [illegible] a wide range of compression ratios [illegible] used with a single ratio of equivalent diameters and [illegible] their production may be standardized. The [illegible]

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[illegible] Eq.(7) by plotting [illegible] 3. There are 5 figures and 1 Soviet ref[illegible]

[illegible] iy mashinostroitel'nyy zavod
(Kiev Engineering Works)

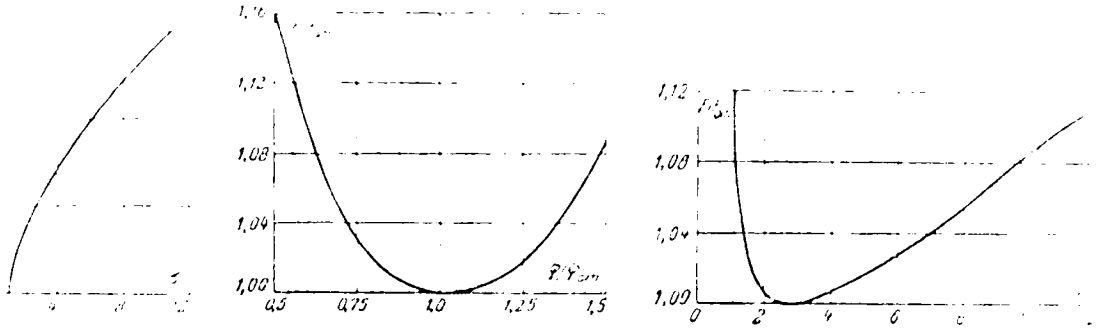

Fig. 3.

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S/114/61/[illegible]/[illegible]/[illegible]
E194/E[illegible]

26.2124

AUTHOR: Novikov, M. D., Engineer

TITLE: Determination of the [illegible] the inter-stage cooler of a compressor

PERIODICAL: Energomashinostroyeniye, no.12, 1961, [illegible]

TEXT: The optimum degree of cooling may be arrived at to give the minimum total weight (or cost) of either [illegible] regenerator, or else of cooler and other [illegible] degree of cooling is approximately known, the compression r[illegible] can be set at an approximate instant value and determined accurately later in the calculations. On the basis of N. Novikov's article (Ref.1: Energomashinostroyeniye, 1960, no.11) formulae are written to relate the cooling surface, the length and the frontal section of the cooler to the corresponding dimensionless magnitudes, and the calculations are then made in dimensionless terms. This leads to some small errors [illegible] of correcting them are described. Then if given [illegible] weight, the volume or the cost of the compressor, divide by [illegible]

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[illegible] the optimum

specific weight, [illegible] the cooling surface of the cooler. The problem is [illegible] the optimum degree of cooling for a given surface or weight. Different procedures are required if the length of the cooler, the unit area or the weight are given. The optimum degree of cooling is then found from the following formula:

$$\frac{\bar{F}}{\Delta_1} \cdot \frac{Q}{\sum_{i}^{N} \frac{}{K_x}}$$

where

$\bar{F}$ is the dimensionless cooling surface;

K_f is the transfer constant from [illegible] dimensionless surface;

G is weight;

N is [illegible] weight;

Δ_1

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E194/E955

... tion of the optimum ...

Δ ... the degree of cooling; L_1 is the ... work ... $\Delta_1 = 0$; L_2 is the ... work ... $\Delta = 1$;

$$b = \frac{\gamma_1}{\gamma_x} \cdot \frac{F}{k_F} \qquad (5)$$

$$n = \frac{L_1}{L_2} \qquad (6)$$

... is the specific weight of heating surface; F is the heating surface per unit flow; The suffix x denotes cooler parameters; The suffix p denotes regenerator parameters. ... relationship between the optimum cooling and 'b' for ... values of 'n' and of 'p', the air pressure beyond the coolers. With these curves the optimum degree of cooling in any particular case is readily determined. If in expression (2), the weight ratio is replaced by the ratio of the respective costs, ... more, of the surfaces of the ... coolers ...

... 5.

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... of the optimum ...

... minimum cost is obtained. If expression (2) ... the following form:

$$b = \frac{\theta_p}{\theta_x} \cdot \frac{F_p}{k_f} + \frac{G_a}{\theta_x k_f}, \qquad (\ldots)$$

... the weight of ... the regenerator, the ... minimum overall weight. It ... rises as 'b' is raised ... degree of regeneration, or ... the cooler is used ... the corresponding ... cooler.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

ZAKHAROV, A.F.; PETROV, G.A.; NOVIKOV, M.D.; POPOV, L.P.; TORSHILOV, Yu.V.; GOLOKHMATOV, S.N.; GUSAROV, A.N.; KOVAL'CHUK, N.P.

Potentialities for increasing labor productivity in the open-hearth process. Stal' 21 no.6:560-562 Je '61. (MIRA 14:5)

1. Nizhne-Tagil'skiy metallurgicheskiy kombinat.
(Open-hearth furnaces--Equipment and supplies)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.D., inzh.

Design of the intermediate cooler for the compressor of a gas turbine system. Energomashinostroenie 8 no.11:28-30, 46 N '62. (MIRA 16:1)

(Gas turbines) (Compressors)

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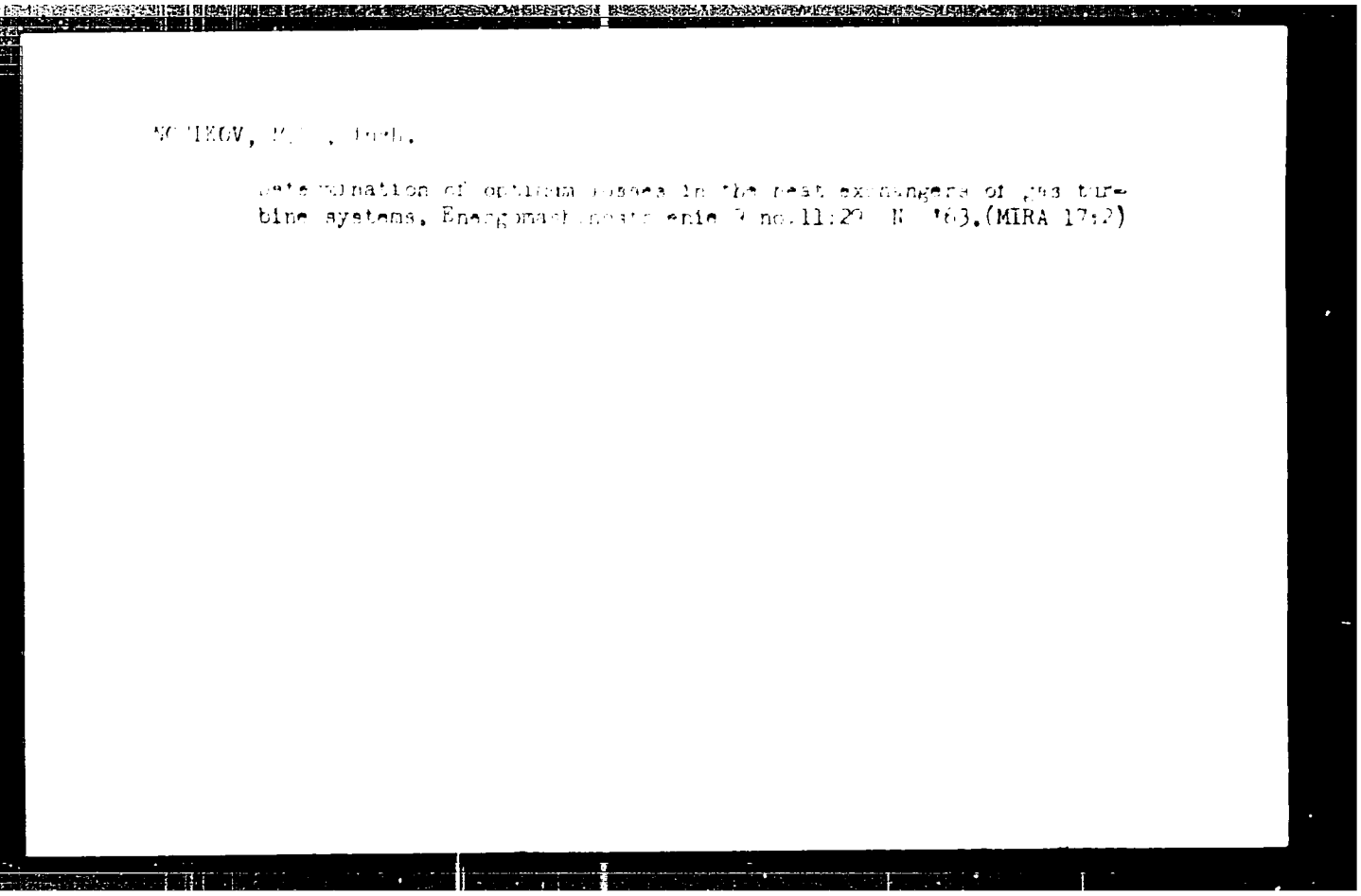

MOSKOV, [illegible]

Determination of optimum values in the heat exchangers of gas turbine systems. Energomashinostroenie 9 no.11:29 N '63. (MIRA 17:2)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

BORADOVSKIY, G.I., [illegible]zh.; DETKOV, G.S.; NOVIKOV, [illegible], inzh.

Remarks concerning B.S.Revzin's article "Technical and economic comparison of regenerative and nonregenerative gas turbines for gas pipelines." Energomashinostroenie 9 no.12:44-48 D '63. (MIRA 17:1)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.D., inzh.

Engineering and economic calculation of the regenerator of a gas turbine system. Teploenergetika 10 no.4:21-23 Ap '63. (MIRA 16:3)

1. TSentral'nyy kotloturbinnyy institut.
(Gas turbines)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.D.; SLIVINSKIY, I.G.; YURKOV, L.F.

Mechanization of draining and granulating melted glass when stopping a pot furnace for repair. Stek.i ker. 20 no.2:35 F '63. (MIRA 16:2)

1. Moskovskiy elektrolampovyy zavod.
(Glass furnaces)

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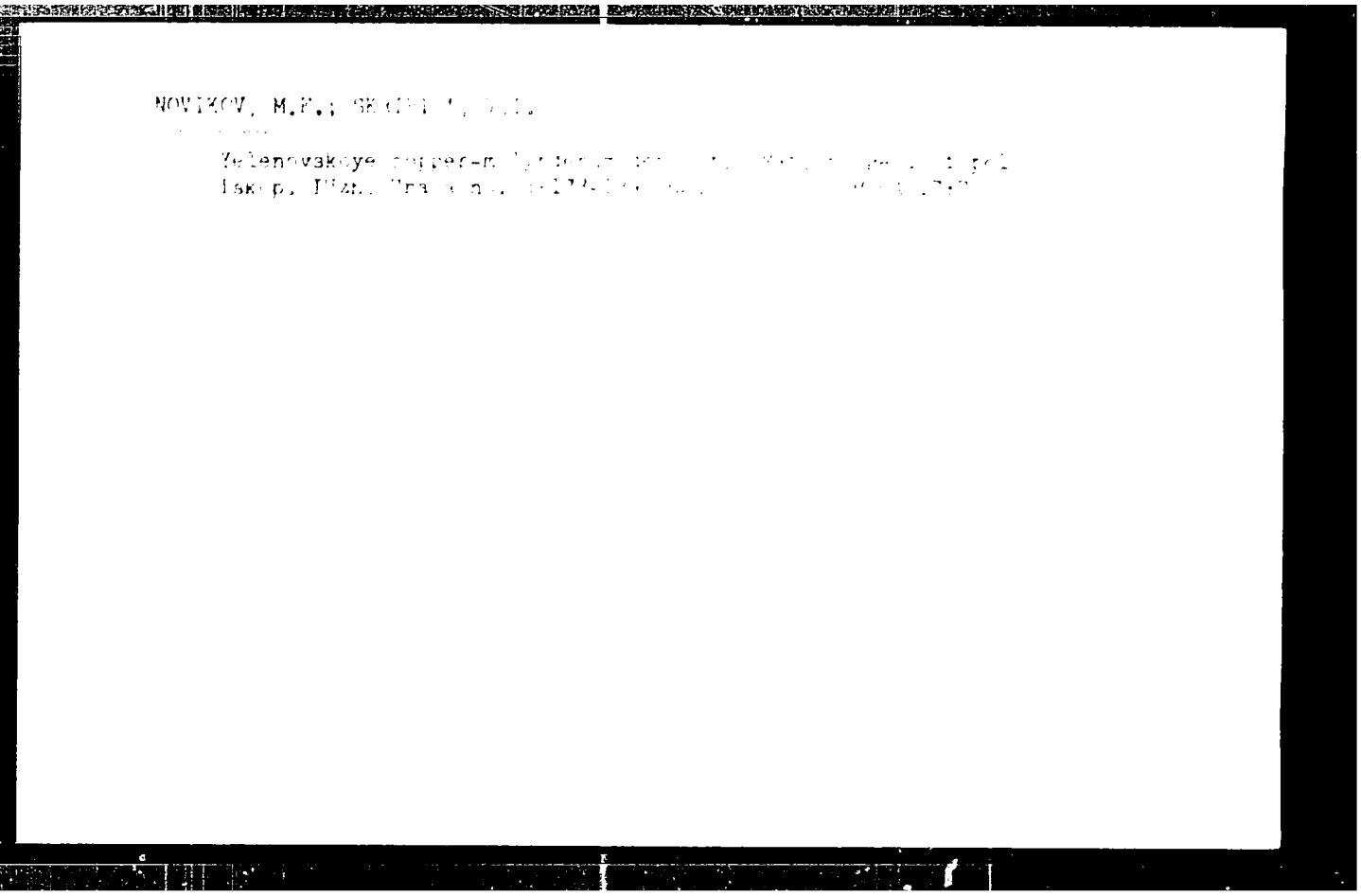

NOVIKOV, M.P.; [illegible]

Yelemovskoye copper-m[illegible]
Iskop. 1[illegible]

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[redacted], M.F.

New information [redacted]
deposit in the Southern [redacted]
106-110 '63.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.G.

USSR/Miscellaneous - Communications

Card 1/1 Pub. 133 - 13/23

Authors : Novikov, M. G., Manager of the Leningrad Telegraph Office

Title : Experiment in the operation of the Leningrad Telegraph line

Periodical : Vest. svyazi 11, 20-22, Nov 1954

Abstract : Details of an experiment, undertaken by the Leningrad Central Telegraph Office, for increasing the efficiency of the office, are given. The time required for handling telegrams and the cost was reduced by installing a special device known as a "concentrator". This device automatically receives and sends telegraph messages from and to the local city-district telegraph stations. The amount of telegrams was further increased through the opening of additional local telegraph offices at railroad stations, factories, department stores, etc. Information is also given on new schools for training telegraph operators and on the personnel undergoing this training. Illustrations.

Institution: .....

Submitted: .....

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.

Make good use of the dietetic food funds. Okhr.truda i sots. strakh. no.5:76-77 M '58. (MIRA 12:1)

1. Doverennyy vrach Smolenskogo oblsovprofa.
(Smolensk Province--Diet in disease)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M., doverennyy vrach (g.Smolensk)

A struggle with colds. Okhr.truda i sots.strakh. no.7:51-52
Jl '59. (MIRA 12:11)
(SMOLENSK PROVINCE--FLAX INDUSTRY--HYGIENIC ASPECTS)
(COLD (DISEASE))

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M. G. Cand Med Sci -- " State of the mucous membrane of the upper respiratory tracts in workers of the Smolenskaya Oblast' flax industry" Minsk, 1960 (Minsk State Med Inst). (KL, 1-61, 209)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.G.; ADAMCHUK, V.D. (Smolensk)

Organization of medical and preventive work at an industrial enterprise. Sov. zdrav. 19 no.3:35-41 '60. (MIRA 14:6)
(SMOLENSK--TEXTILE WORKERS--MEDICAL CARE)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.G.

Disease of the upper respiratory tract in workers in the flax industry. Vest.otorin. 22 no.6:32-36 '60. (MIRA 14:1)
(RESPIRATORY ORGANS--DISEASES)
(TEXTILE WORKERS--DISEASES AND HYGIENE)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.G.

Defensive role of the mucous membrane of the upper respiratory passages in lung diseases. Zhur. ush., nos.i gorl. bol. 21 no.3: 52-53 My-Je '61. (MIRA 14:6)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - dotsent G.M. Starikov) Smolenskogo meditsinskogo instituta.
(SMOLENSK—TEXTILE WORKERS—DISEASES AND HYGIENE)
(LUNGS—DISEASES) (MUCOUS MEMBRANE)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

STARIKOV, G.M., kand.med.nauk; NOVIKOV, M.G.

Prevention and treatment of anginas and chronic tonsillitis in an industrial plant. Sov. med. 25 no.7:119-122 Jl '61. (MIRA 15:1)

1. Iz kafedry bolezney ukha, gorla i nosa (zav. - dotsent G.M.Starikov) Smolenskogo meditsinskogo instituta.
(TONSILS--DISEASES)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

BATOZSKAIA, E. A., LISHCHENKO, P. S., NOVIKOV, M. I., POLTAVSKII, I. L., SRIAZKUN, G. F., PRIKHOD'KO, P. G., NIKITIN, V. N.

Decisive role of outer media and functional state of the organism in ontogenesis of the blood plasma in horses. Zh. obsh. biol. 11:3, May-June 50. p. 198-202

1. Khar'kov Zootechnical Institute and Khar'kov State University.

CLML 19, 5, Nov., 1950

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

KOTSYUBINSKIY, O.Yu.; GERCHIKOV, A.M.; UTESHEV, R.A.; NOVIKOV, M.I.

Vibration aging of iron castings. Lit. proizv. no.8:31-34 Ag '61. (MIRA 14:7)

(Iron founding)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.I.

USSR/Telegraphy Dec 1947
Communications

"News in the Organization of the Control-information Service," M. I. Novikov, Director of the Leningrad Central Telegraph, 1 p

"Vestnik Svyazi - Elektrosvyaz'" No 12 (93)

A reorganization of the control-information service was inaugurated in the Leningrad Central Telegraph. This was based on the fact that the trunk line and the city communications equipment were distributed throughout the network in such a way that they were more or less separate, making it possible for the control-information service to be separated or decentralized and placed in closer relationship with the transmitters.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.I.

Operating experience of the Leningrad telegraph office. Vest.sviazi 14 no.11:20-22 N '54. (MLRA 8:1)

1. Nachal'nik Leningradskogo telegrafa.
(Leningrad--Telegraph stations)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

AFANAS'YEV, A.P.; ANUCHIN, V.G.; VINOGRADOV, K.V.; GARANINA, M.M.; GILEROVICH, M.M.; DUBROVSKIY, Ye.P.; YEVSTIGNEYEV, A.A.; IOKHVIN, M.R.; KALMYKOV, P.M.; KRENGEL', I.TS.; LOSEV, I.G.; MAYEVSKIY, F.M.; MAZEL', S.I.; MIZHERITSKIY, G.S.; NOVIKOV, M.I.; NAZAR'YEV, O.V.; PCHELKINA, I.A.; RAZUMOV, V.S.; ROZENBLYUM, I.M.; SEROV, B.P.; SKRYPNIK, T.I.; SAL'VIN, Ye.S.; SMOTRINA, V.F.; TELEPNEVA, N.S.; FIL'CHAKOV, N.I.; KHRAPUNOVA, Ye.L.; UNDREVICH, G.S.; UR'T'YEV, P.P.; SHILOV, A.A.; SHLYKOV, A.P.; KIRILLOV, L.M., red.; MARKOCH, M.G., tekhn.red.

[Regulations on the construction of minicipal telephone network lines] Pravila po stroitel'stvu lineinykh sooruzhenii gorodskikh telefonnykh setei. 2.izd. Moskva, Sviaz'izdat, 1962. 511 p. (MIRA 15:5)

1. Russia (1923- U.S.S.R.) Ministerstvo svyazi. Glavnoye upravleniye kapital'nogo stroitel'stva.
(Telephone lines)

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L 25265-65 EWT(m)/EPF(c)/EPR/EWP(j)/T Pc-4/Pr-4/Ps-4 WW/RM

ACCESSION NR: AP5002019 S/0138/65/000/001/0004/0008

AUTHOR: Bebris, K.D.; Veresotskaya, N.V.; Kabichkina, S.I.; Novikov, M.I.

TITLE: The effect of mechanical treatment conditions in the mixing process of the properties of mixtures and vulcanizates

SOURCE: Kauchuk i rezina, no. 1, 1965, 4-8

TOPIC TAGS: synthetic rubber, rubber mechanical treatment, rubber mixing, rubber mechanical property, vulcanizate mechanical property, carbon black, scorching, butadiene styrene rubber

ABSTRACT: The effect of temperature, mode of mixing, and the type of carbon black on the mechanical properties of tire tread and carcass rubbers was experimentally studied to define the causes for scorching under commercial conditions and the optimum method of mixing. The study covered BSK-butadiene-styrene rubber (50:50 mixture of Europrene 1500 and 1712), SKS-30ARKM (emulsion-polymerized and oil-extended 70:30 butadiene-styrene copolymer, prepared at 5C with rosin soap emulsifier), the carbon blacks PAYSAF, KhAF, and FIF, and the plasticizer PN-6. For BSK, the tendency to scorching increased at mixing temperatures below 105C, and it increased if accelerator and

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ACCESSION NR: AP5002919

plasticizer were added at the start of the mixing cycle together with carbon black AYSAF or KhAF, rather then after the dispersion of the black. Wear resistance improved if the mixing temperature reached 120-140C. The scorching of SKS-30ARKM-carbon black FIF mixtures was not affected by the addition of components in a single step or in two steps, and mixing in a single step increased the tensile strength of vulcanizates. The carbon black FIF was shown to cause higher destruction of the polymer structure than the other carbon black types, particularly with mixing under high stress. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Tire industry scientific research institute)

SUBMITTED: 00 ENCL: 00 SUB CODE: MT

NO REF SOV: 004 OTHER: 007

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.I., inzh.; KOSOVTSEV, I.S., inzh.

The E-2005 rock excavator used for mechanizing the earthmoving work in open-pit mines and quarries. Stroit i dor.mashinostr. 3 no.3:3-6 Mr '58. (MIRA 11:3)

(Excavating machinery)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.I., inzh.

Amount of air for forced ventilation of development workings following blasting. Izv. vys. ucheb. zav. gor. zhur. no.8:55-58 '60.
(MIRA 13:9)

1. Moskovskiy gornyy institut im. I.V.Stalina. Rekomendovana kafedroy rudnichnoy ventilyatsii i tekhniki bezopasnosti.
(Mine ventilation)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.I., gornyy inzh.; GOLUTVIN, V.A., kand.tekhn.nauk

Use of the chamber-and-pillar in the Mine No.11 of the Noril'sk deposit. Ugol' 36 no.3:7-10 Mr '61. (MIRA 14:3)
(Tunguska Basin--Coal mines and mining)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

138-1-4/16

AUTHORS: Bebrin, K. D; Veresctskaya, N. V; Zherebtsov, A. N; Novikov, M. I.

TITLE: Investigation of a Rapid Mixing Process in the Rubber Mixer 3A. (Issledovaniye protsessa skorostnogo smesheniya v rezinosmesitele 3A).

PERIODICAL: Kauchuk i Rezina, 1958, Nr.1. pp. 13 - 20. (USSR).

ABSTRACT: The intensification of mixing in a rubber mixer was achieved by increasing the speed of the revolutions of the rotor and by increasing the pressure of the seal on the mixture. Fig. 1 shows the ratio of duration of mixing to the pressure of the upper seal for butadiene-styrene rubber (according to R. N. Comes - Ref. on page 20). In the mixer No.11 the speed of revolutions = 40 revolutions/minute; the optimum pressure on the mixture 4-6 kg/cm^2; the pressure of air in the cylinder: 7 atms. For this experiment the rubber mixer 3A was modified, the speed of the revolution of the rotors was increased from 28.4/32.1 to 57.2/64.6 revolutions/minute. The 100 KWT motor was exchanged for a 198 KWT motor; the pressure of the upper seal on the mixture was increased to 4.6 Kg/cm^2 by installing a 370 mm diameter

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

Investigation of a Rapid Mixing Process in the Rubber Mixer 3A.

cylinder. Sprayers improved the cooling arrangement of the mixer. Basic technological factors influencing the process of mixing were determined. Various experiments were carried out to determine the optimum height of charging the mixer.
The optimum volume was found to be 41/43% (Fig.2). Fig.3 gives the dependence of the properties of the mixtures and vulcanising agents and the volume of the charge of mixture and the methods of mixing. The optimum time of the process of mixing in the first stage was found to vary between 1½ - 2 minutes; for mixtures containing a large amount of carbon black e.g. 2P'-305, the optimum time of mixing = 2 minutes. Results of experiments to determine the optimum temperature of mixing are given in Table 2. The dependence of the properties of the mixtures and vulcanisates and the pressure of the upper seal and method of mixing: Fig.4. The effect of the pressure of the upper seal on the process of mixing when the charge was 50 litre, according to methods of mixing: Figs.5, 6 and 7. From results given in Figs. 5 - 8 it can be concluded that the pressure of the upper seal should be approximately 3 Kg/cm^2 for a 50 litre charge and

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Investigation of a Rapid Mixing Process in the Rubber Mixer 3A.

the plasticity of the mixture above 0.40(according to Karrer). When the pressure of the upper seal is increased from 0.66 to 3 kg/cm^2 the average input and loss of electro-energy increases from 14 to 17%, whilst the properties of the mixture and vulcanisates remain constant. The load on the motor is practically unchanged when the volume of the mixture is increased from 40 to 45 litre and the pressure of the upper seal on the mixture is 4.3 kg/cm^2 (Fig.9). Good results were obtained when natural rubber was plasticised in the mixer; the temperature of the rubber was increased from 140 - 150°C after processing for 3 minutes, and to 155 - 160°C when the time of the experiment was increased from 5 to 7 minutes. 6-7 minutes processing was required to achieve a plasticity of 0.37 - 0.40 (Fig.11). When natural rubber was plasticised in the presence of accelerators a 0.45 plasticity (according to Karrer) was obtained after 3 minutes at a temperature of 145°C. Experiments on controlling the rate of the mixing process were also carried out. The consumption of electro-

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Investigation of a Rapid Mixing Process in the Rubber Mixer 3A.

energy was investigated and results are given in Table 4. Mixtures prepared by the 2-stage method of mixing make it possible to improve the properties of mixtures. The process is more economical because when compared with 1-stage methods only about one third of the number of mixers are required. There are 11 Figures, 4 Tables and 1 English Reference.

ASSOCIATION: Research Institute of the Rubber Tyre Industry. (Nauchno-issledovatel'skiy institut shinnoy promyshlennosti).

AVAILABLE: Library of Congress.

Card 4/4

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

S/138/59/000/011/006/011
A051/A029

AUTHORS: Bebris, K. D.; Vasil'yev, A. R.; Veresotskaya, N. V.; Novikov, M. I.

TITLE: On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

PERIODICAL: Kauchuk i Rezina, 1959, No. 11, pp. 27-34.

TEXT: The mixing conditions of rubber mixtures and the methods of increasing their productivity were studied on a usual РС-2 (RS-2) mixer. The investigations were based on experience obtained at various Soviet Tire Plants and on general world practice of using the method of elevated pressure at the upper lock and increased rotation of the rotors (Ref. 1). It was found that the intensification of the mixing process could be accomplished by increasing the volume of the filling mixture by loading all the materials into the mixer at the beginning of the cycle and by increasing the pressure of the upper lock, i.e., by the production of the mixtures using an elevated power input. The order in which the material is fed to the mixer also has an effect on the increased pressure of the upper lock. Fig. 1 is a diagram showing the input power used in the production of tread rubber based on СКС-30АМ (SKS-30AM) with 30 weight

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

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A051/A029

On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

parts of furnace and 30 weight parts of channel carbon black. Table 1 shows the energy consumption and the input power used in the production of the mixtures in addition to the physico-mechanical indices of the corresponding rubbers. It is concluded that the mixing intensity is directly proportional to the input power. The specific energy consumption during the mixing process of mixtures of the same compositions at elevated power input and correct mixing conditions is approximately the same as for ordinary conditions. The general criterion for evaluating the mixing intensity is the input power, and for the mixing duration the energy consumption at given conditions. In producing a mixture with a hardness of 500-800 g according to Defoe, a specific pressure at the upper lock of 1.2 kg/cm^2 was found to be adequate, corresponding to the highest values of the input power and the consumption of energy per unit of time. The value of 1.2 kg/cm^2 was accepted as the optimum specific pressure. The replacement of the upper cylinders having a diameter of 203 mm by those having a diameter of 407-410 mm at tire plants in the Soviet Union is unjustified, since the mixtures manufactured in the Soviet Union are not as hard as those manufactured

Card 2/4

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On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

abroad, which have a hardness of 1,200-1,500 g. The clearance between the rotor comb and the wall of the mixing apparatus has a direct bearing on the intensity of the mixing process, the optimum value being 4.5 mm, at a charge of 158 liters or a 62.5%-filling of the mixing apparatus. Research carried out at the NIIShP and various tire plants resulted in an increase in this volume to 155-164 l for casing mixtures and 150-155 l for tread mixtures, depending on the mixing temperature and the distribution of the ingredients in the mixture, and also on the clearance between the rotary combs and the walls of the mixer. It is pointed out that feeding the carbon black into the mixer after the other ingredients can decrease or eliminate the effect of the increased pressure at the upper lock on the mixing procedure. It is recommended that first the furnace carbon black be introduced, then liquid softeners, then the finely-ground ingredients, the rubber, and finally the channel carbon black. A reverse sequence is recommended when producing mixtures containing lump-forming carbon blacks, such as channel carbon black and anthracene. When loading all the ingredients into the mixer at the beginning of the cycle and at an elevated pressure of

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On the Production of Rubber Mixtures in Rubber Mixers Using an Elevated Power Input

the upper lock the optimum duration period is 5.0-6.5 min. (depending on the composition of the mixture). The following characteristic features of mixing in the RS-2 mixer were established: 1) The mixture temperature during the mixing process increases proportionately to the energy consumed in the mixing. 2) The compression system of the rotors should be improved to eliminate an increase in extruded parts and dusting. 3) In applying an elevated power input to the RS-2 mixer, the loading apparatus can be subjected to vibrations, leading to a loosening of various parts, such as the loading funnel and cylinders. It is suggested that these defects be eliminated by close observations. Producing rubber mixtures at an elevated power input decreases the mixing time and improves the quality of the mixture at the same time. There are 4 sets of diagrams, 6 tables and 5 references: 2 Soviet, 3 English.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

BALASHOV, A.P.; BEBRIS, K.L.; VERESOTSKAYA, N.V.; LANOVICH, L.Ye.; DRIGUN, V.N.; KABICHKINA, S.I.; NOVIKOV, M.I.; SOKOLOV, V.D.

Improvement of the methods for the preparation of tread rubber compounds based on BR under the conditions of Dnepropetrovsk Tire Factory. Kauch. i rez. 23 no. 3:5-9 Mr '64. (MIRA 17:4)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti i Dnepropetrovskiy shinnyy zavod.

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

BRIDS, A.D.; VERKHOVSKAYA, N.V.; KARICHKINA, L.I.; NOVIKOV, N.I.

Effect of the mechanical processing conditions in the course of mixing on the properties of compounds and vulcanizates. Kauch. i rez. 24 no.1:4-8 Ja '65. (MIRA 18:4)

1. Nauchno-issledovatel'skiy institut shin oy promyshlennosti.

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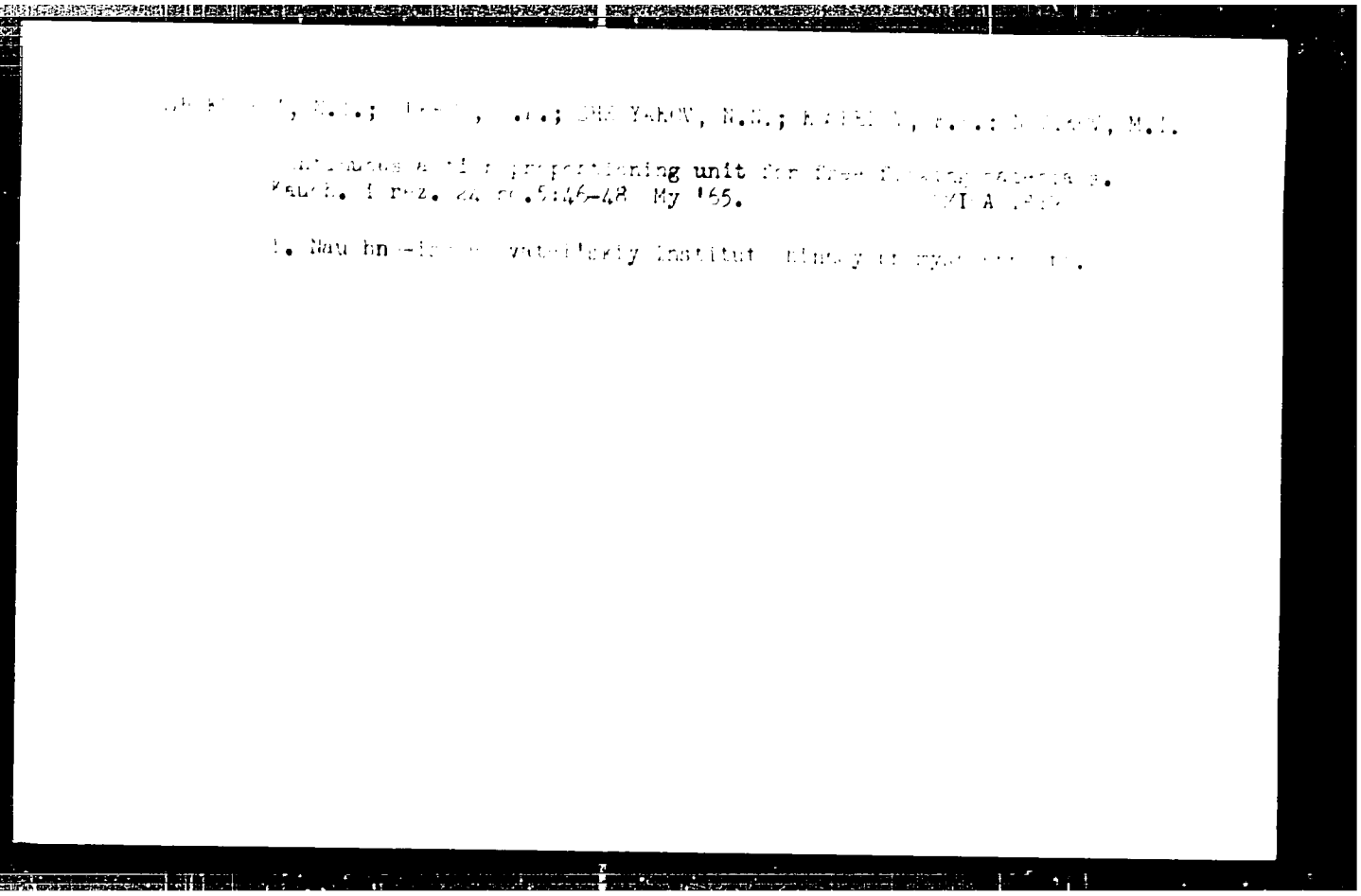

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L 24823-66 EWT(d)/EWT(m)/EWP(v)/EWP(t)/EWP(k)/EWP(h)/EWP(l) IJP(c) JD/HW

ACC NR: AP6006951 (N) SOURCE CODE: UR/0381/65/000/006/0003/0008

AUTHORS: Zatsepin, N. N.; Shcherbinin, V. Ye.; Yezhov, N. M.; Kokhman, L. V.; Novikov, M. K.; Lyubynskiy, Ye. A.

ORG: Institute of Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR); Pervoural New Pipe Factory (Pervoural'skiy Novotrubnyy zavod)

TITLE: Ferroprobe defectoscope for steel tubes in applied circular magnetic fields

SOURCE: Defektoskopiya, no. 6, 1965, 3-8

TOPIC TAGS: steel, ferromagnetic material, magnetic field, defectoscope, measuring instrument

ABSTRACT: A method is described for locating defects in ferromagnetic tubes made of hot-rolled and cold-drawn steels. The technique consists of measuring both surface and internal defects simultaneously by an externally placed ferromagnetic probe counter. The method is applied under both static and dynamic conditions with equal success. In the dynamic case, the probe is rotated around the tube at the rate of 1000 rev/min. Curves are obtained depicting the probe emf versus the depth of surface defects and the depth of defects on the internal surface of the tube. A large amount of scatter observed in the data is caused primarily by the varied configurations of the defects. For a 4-mm wall thickness, surface defects

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ACC NR: AP6006951

appear to start at depths of 0.1--0.2 mm, in the internal surface defects, at 0.2--0.3 mm. The authors express their gratitude to R. I. Yanus for his valuable advice in evaluating this work. Orig. art. has: 6 figures.

SUB CODE: 14/ SUBM DATE: 16Oct65/ ORIG REF: 003

Card 2/2 dla

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

PHASE I BOOK EXPLOITATION SOV/3564

Novikov, Mikhail Leont'yevich (Deceased)

Novaya sistema zubchatogo zatsepleniya New System of Toothed Gearing. Moscow, n.p., 1959. 40 p. 4,000 copies printed. (Series: Peredovoy opyt proizvodstva. Seriya, Tekhnologiya mashinostroyeniya, vyp. 27. Novyye tekhnologicheskiye protsessy).

Sponsoring Agencies: Moscow. Dom nauchno-tekhnicheskoy propagandy imeni F.E. Dzerzhinskogo, and Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR.

Resp. Ed.: G.G. Yatsenko; Tech. Ed.: R.A. Sukhareva.

PURPOSE: The booklet is intended to acquaint the reader with Novikov's system of tooth gearing.

COVERAGE: The booklet is a condensed version of a report by M.L. Novikov, the originator of the new gearing system. The report was made March 20, 1957, at the Moscow House of Scientific and Technical Propaganda imeni F.E. Dzerzhinskiy. The content of the report is supplemented by data from later works of the author. It was prepared for publication by R.V. Fadyakin,

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New System of Toothed (Cont.) SOV/3564

Candidate of Technical Sciences. There are 6 references: 5 French, and 1 Soviet.

TABLE OF CONTENTS: None given. The book is divided as follows:

Card 2/3

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

AVAILABLE: Library of Congress

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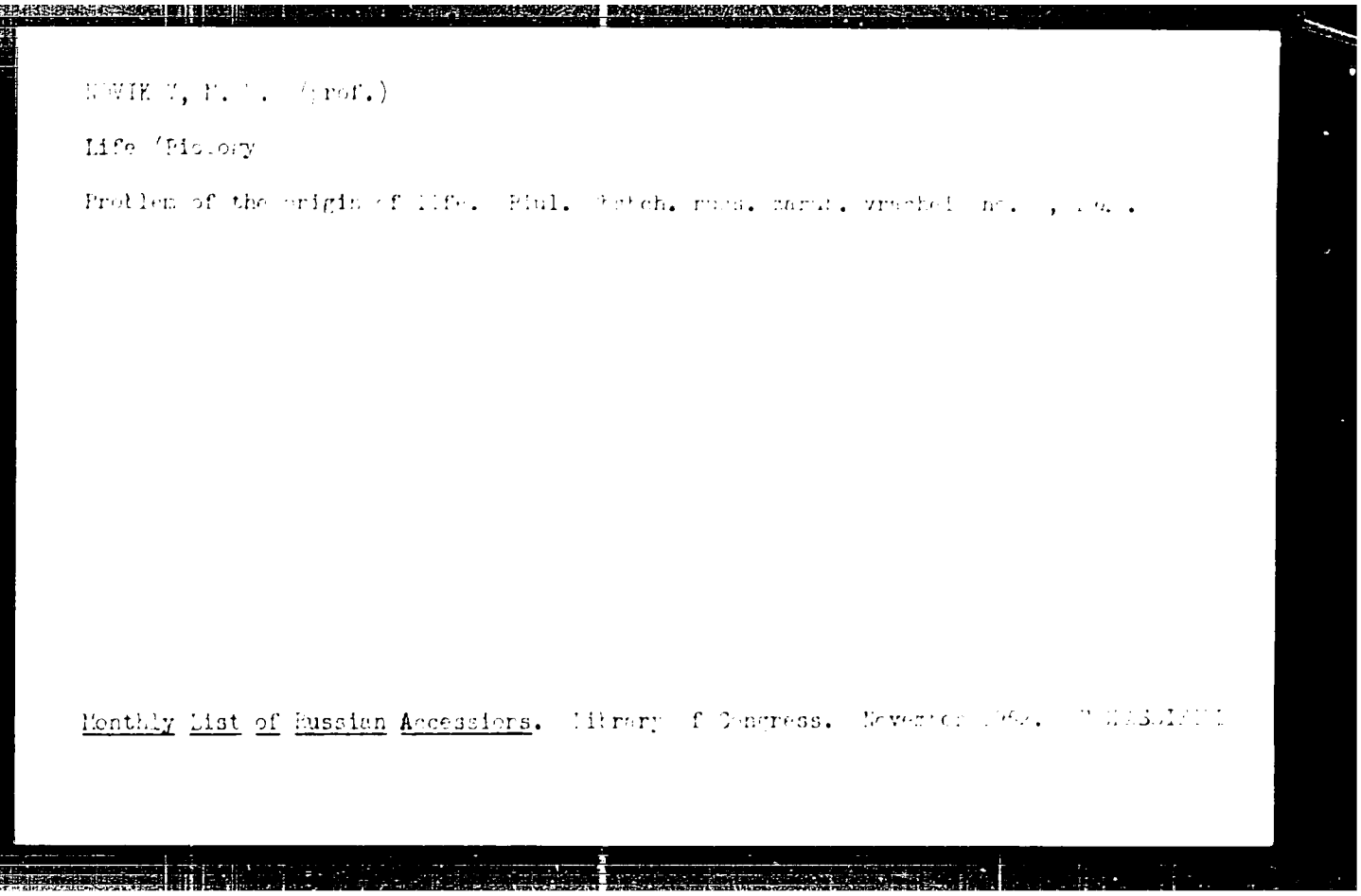

OPARIN, A. I. (Prof.)

Life (Biology)

Problem of the origin of life. Biul. eksp. biol. i med. Supplement 1, 1947.

Monthly List of Russian Accessions. Library of Congress. November 1952. UNCLASSIFIED

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, Mikhail Mikhaylovich, 1876-

[50 years of scientific work] Polstoletie nauchnoi deiatel'nosti. New york, 1956. 80 p. (MLRA 10:5)
(Biology)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, Mikhail Mikhaylovich (1876-)

[Giants of Russian natural science] Velikany rossiiskogo estestvoznaniia. Frankfurt/M, Posev, 1960. 199 p. (MiHA LA:11)
(Natural history)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

SOV/51-5-5-5/23

AUTHORS: Patovskiy, ..., Panibaly, L.F. and Novikov, ...

TITLE: Vibrational Constants and Dissociation Energy of the BeF Molecule (Kolebatel'nyye postoyannyye i energiya dissotsiatsii molekuly BeF)

PERIODICAL: Optika i Spektroskopiya, 1958, vol 5, Nr 5, pp 520-529 (USSR)

ABSTRACT: The paper reports a new investigation of the vibrational structure of the $A^2\Pi - A^2\Sigma$ bands of BeF. The BeF spectrum was excited using gas-discharge tubes. Since the gas temperature is comparatively low in such tubes the rotational structure of the bands was weaker than in an arc and this reduced overlapping of bands and made it easier to observe new band edges. Two types of tubes were used in this work: one working under steady-state conditions (Fig 1) and the other for pulse excitation (Fig 2). Both tubes were filled with helium under 2-3 mm Hg pressure. BeF molecules were introduced into the discharge tubes by placing some BeF_2 in nickel boats inside the tube. The tube used for steady-state discharges was U-shaped (1, in Fig 1) and had a quartz window (7, in Fig 1). The space around the electrodes (2, in Fig 1) was joined to the tube proper via liquid-hydrogen traps (4 and 5 in Fig 1). The tube was supplied from a 630 W transformer at 15 kV. The pulse-discharge source

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Vibrational Constants and Dissociation Energy of the BeF Molecule

consisted of a straight tube (1, in Fig 2) with a fluorite window (2, in Fig 2). Its electrodes (4, in Fig 2) were supplied every second (for 0.02 sec) with a 600-700 v, 9 A pulse. The spectra were recorded using a DFS-7 spectrograph of 2 Å/mm dispersion and 144000 resolving power. An iron spectrum was used as a wavelength standard. Measurements were made with 0.5 cm^{-1} precision. The spectra is shown in Fig 3. The measured band edges are given in Table 1. 88 new edges of $^1\Delta_1$-branches and 54 new edges of R_2 and R_1 branches were recorded. Table 2 gives the rotational constants ω_0, $\omega_0 x_0$ and $\omega_0 y_0$ of BeF taken from Refs 1, 3, 5, 6 and from the results reported in the present paper. Table 3 gives the values of ν'_{max}, ν''_{max}, $G'_0(\nu'_{max})$ and $G''_0(\nu''_{max})$ allowing for (columns I) and neglecting (columns II) the second coefficient of anharmonicity $\omega_0 y_0$ of the BeF molecule. Table 4 gives the recommended most reliable values of the spectroscopic constants of the BeF molecule

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SOV/51-5-5-5/23

Dissociation Energy of the BeF Molecule

This table gives the dissociation energies of the $X^2\Sigma$ and $A^2\Pi$ states as 6 ± 0.5 and 5.9 ± 0.5 ev respectively. The author thanks L... Gurvich for his advice. There are 4 figures, 4 tables and 7 references.

SUBMITTED: December 6, 1957

Card 3/3 1. Beryllium fluoride--Spectrographic analysis 2. Molecules--Spectra 3. Molecules--Energy 4. Gas dischargers--Applications

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

24(7), 5(2) SOV/51-1-18/27

AUTHORS: Gurvich, L.V. and Novikov, M.M.

TITLE: On the Valence Angle of Oxygen in the HOCl Molecule (O valentnom ugle kisloroda v molekule HOCl)

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 1, pp 116-117 (USSR)

ABSTRACT: Hedberg and Badger (Ref 1) used the infrared spectrum of gaseous HOCl to deduce that the oxygen valence angle $<$HOCl is equal to 113°. The present authors are of the opinion that this angle should not be greater than 110° and they repeat Hedberg and Badger's calculations showing that best agreement with the empirical data is obtained with $<$HOCl = 104 ± 3°. There is 1 English reference.

SUBMITTED: November 5, 1958

Card 1/1

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

S/061/60/008/06/003/
E201/E691

5.4130

AUTHORS: Novikov, M.M. and Tunitskiy, L.N.

TITLE: The Vibrational Constants and the Dissociation Energy of the BeCl Molecule

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 6, pp 752-760 (USSR)

ABSTRACT: Two electron states ($X^2\Sigma$ and $A^2\Pi$) of the BeCl molecule are known. Fredrickson and Hogan (Ref 1) determined the vibrational constants, ω_e and $\omega_e x_e$ and estimated the rotational constants B'_o and B''_o. Fredrickson and Hogan (Ref 1) used linear approximation to obtain the dissociation energies of the $X^2\Sigma$ (4.33 eV) and $A^2\Pi$ (3.47 eV) states. Gaydon (Ref 3) corrected the former value to 3 ± 0.5 eV. The present paper reports a new investigation of the vibrational structure of the BeCl molecular band. A quartz pulse-discharge tube (Ref 4) was employed. The spectra (cf. a figure on p 753) were photographed with a DFS-3 spectrograph (dispersion of 2 Å/mm, resolving power of 144 000). The spectra were measured with a comparator IZA-2 (an iron arc spectrum was used as the wavelength standard). Thirty new Q_1 band edges and 43 new R_1 and R_2 band edges were recorded. More precise values (Table 6) of the

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S/051/60/008/06/003/02.
E201/E691

The Vibrational Constants and the Dissociation Energy of the BeCl Molecule

vibrational constants ω_0 and $\omega_0 x_0$ of the $X^2\Sigma$ (841.3 and 5.11 cm^{-1} respectively) and the $A^2\Pi$ (816.0 and 5.06 cm^{-1} respectively) states were obtained. The second coefficients of anharmonicity $\omega_0 y_0$ were calculated for both states (0.0205 for $X^2\Sigma$ and -0.0368 cm^{-1} for $A^2\Pi$). The third coefficient of anharmonicity of the $X^2\Sigma$ state was found to be - 0.0000582 cm^{-1}. Non-linear extrapolation yielded a new and more reliable value of the dissociation energy of BeCl; 5.9 ± 0.5 eV (Table 6). In the 2610-2620 Å region new bands were discovered (Table 7) which are due to a transition from a hitherto unknown electron state. There are 1 figure, 6 tables and 6 references, of which 2 are Soviet, 2 English, 1 French and 1 translation from English into Russian.

SUBMITTED: September 21, 1959

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

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L 21171-65 EWT(m)/EWP(t)/EWP(b) IJP(c) JD/JW
ACCESSION NR: AP5003033 S/0051/65/018/001/0132/0134

AUTHOR: Gurvich, L. V.; Novikov, M. M.; Ryabova, V. G.

TITLE: Investigation of spectra and determination of dissociation energies of oxygen compounds of gallium and indium

SOURCE: Optika i spektroskopiya, vo. 18, no. 1, 1965, 132-134

TOPIC TAGS: arc spectrum, dissociation energy, gallium compound, indium compound, oxide, hydroxide

ABSTRACT: In view of the contradictory published data concerning the dissociation energy of the GaO and InO molecules, and also concerning the oxygen compounds produced by gallium and indium in flames, the authors have undertaken new investigations of the electronic spectrum of GaO and the equilibrium reaction of Ga and In with the combustion products of flames of the type $aH_2 + bO_2 + cN_2 + dH_2O$ and $aCO + bO_2 + dH_2O$. The known system of bands of GaO was investigated in the 3350--4150 Å band with a grating spectrograph, and the constants of the molecule $Ga^{69}O$ were determined. An attempt to obtain the absorption spectrum of GaO in the range 3600--7000 Å with the arc and gas discharge exposed to a strong pulsed

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ACCESSION NR: AP5003033

source has shown absorption due to GaO only in the 4000 Å region. Although there is no final proof that the lower state of the investigated system is the ground state of GaO, this assumption is quite likely. The equilibrium of the reactions of Ga and In with the flame combustion products was investigated by determining the partial pressures of the metals from the relative intensity of the atomic lines in the flame spectra. The corresponding equilibrium constants were calculated from the measured partial pressures and from those calculated theoretically for equilibrium conditions. It was impossible to determine the dissociation energies of GaOH and InOH in the flames of carbon monoxide, because of the high temperature and the low concentration of the hydroxyl. In hydrogen and oxygen flames, the dissociation energies of GaOH and InOH were 101 ± 5 and 90 ± 5 kcal/mole, respectively. It is concluded that the main compounds of Ga and In in the 12 types of flames employed are the hydroxides, produced in the reaction $Me + H_2O = MeOH + H$ (Me = Ga or In). Other effects observed in the flames are briefly discussed.

ASSOCIATION: None

SUBMITTED: 04Nov63 ENCL: 00 SUB CODE: OP, GC

NR REF SOV: 003 OTHER: 004

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, K.

Medical help is available day and night. Okhr.truda i sots. strakh. no.5: 45-47 My '59. (MIRA 12:8)

1. Doverennyy vrach Smolenskogo oblsovprofa.
(Smolensk--Medicine, Industrial)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.N., inzh.; RAKOV, P.P., inzh.

Safe filling appliances for oil and oil products. Bezop. truda v prom. 5 no.8:23-24 Ag '61. (MIRA 14:8)
(Petroleum industry--Equipment and supplies)
(Petroleum industry--Safety measures)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.M., inzh.

Construction of gas wells without accidents. Bezop.truda v prom. 6 no.7[illegible]-3 Jl '62. (MIRA 15:7)

1. Gosudarstvennyy komitet pri Sovete Ministrov RSFSR po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru. (Gas wells--Safety measures)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

KOVIKOV, M. M., inzh.; OVSYANNIKOV, Yu. N., inzh.

Problems of safety engineering at the Third Congress of the Trade Union of Petroleum and Chemical Industries Workers. Bezop. truda v prom. 6 no.9:38-39 S '62. (MIRA 16:4)

(Industrial safety)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.M., inzh.

Consolidate the achievements of oil-field workers on Sakhalin. Bezop. truda v prom. 7 no.2:12-13 F '63. (MIRA 16:2)

1. Gosudarstvennyy komitet pri Sovete Ministrov RSFSR po nadzoru za bezopasnym vedeniyem rabot v promyshlennosti i gornomu nadzoru.
(Sakhalin—Oil fields—Safety measures)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.M., inzh.

Mechanized pipe supply to the walk of an oil-well drilling rig. Bezop truda v prom. 7 no.4:31 Ap '63. (MIRA 16:4)

(Oil well drilling rigs—Technological innovations)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

DROGALIN, Grigoriy Vasil'yevich; KURAS, Demiz Matveyevich; POLESIN, Yakov Lazarevich; [illegible], M.M., nauchn. red.; BEKMAN, Yu.K., ved. red.

[Safety measures in geological prospecting] Tekhnika bezopasnosti pri geologorazvedochnykh rabotakh. Izd.2. Moskva, Izd-vo "Nedra," 1964. 440 p. (MIRA 17:6)

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7"

"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.M., inzh.

Aluminum alloy drill pipe. Bezop.truda v prom. 9 no.4:17-19 Ap '65.
(MIRA 18:5)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

MYAKOSHIN, N.V., inzh.; NOVIKOV, M.M., inzh.; PAVLOV, K.I., inzh.

Joints of precast reinforced-concrete elements of thermal electric plants. Energ. stroi. no.26:15-22 '61. (MIRA 15:7)

1. Dzerzhinskiy KPP (for Myakoshin, Novikov). 2. Moskovskiy filial Vsesoyuznogo instituta po proyektirovaniyu organizatsiy energeticheskogo stroitel'stva (for Pavlov).
(Electric power plants) (Precast concrete construction)

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"APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137430005-7

NOVIKOV, M.M., inzh.; MYAKOSHIN, N.V., inzh.; PAVLOV, K.I.

Vibratory stamping of reinforced concrete structures for thermal electric power plants. Energostroi. no 2:35-39 '61. (MIRA 13:6)

1. Dzerzhinskiy KPP tresta "Energostroykonstruktsiya" (for Novikov, Myakoshin). 2. Moskovskiy filial instituta "Orgenergostroy" (for Pavlov).

(Reinforced concrete construction)
(Electric power plants--Desing and construction)

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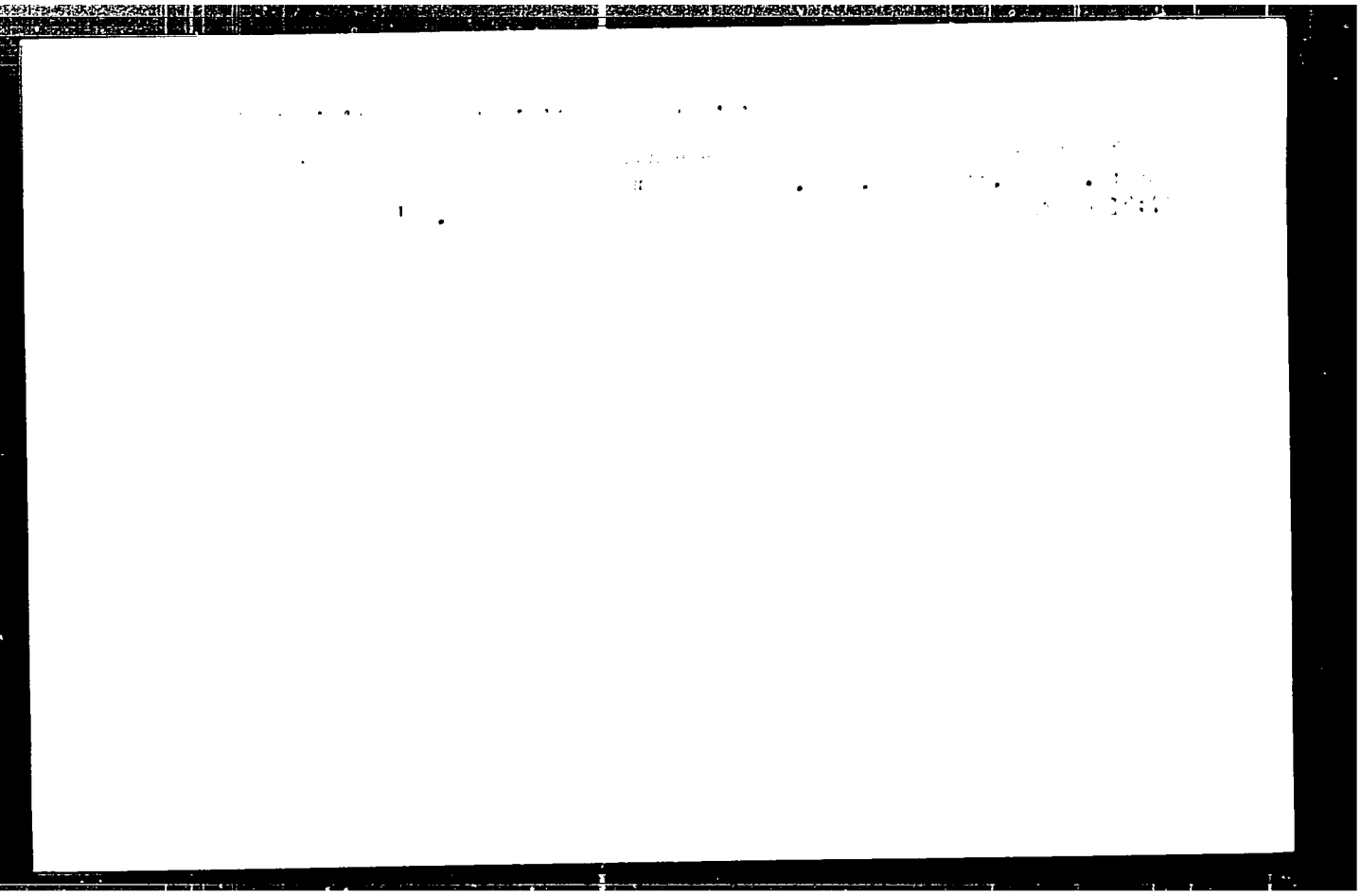

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L 4386-66 EWT(1)/T IJP(c)

ACC NR: AP5017909 UR/0051/65/019/001/0143/0145

535.33

AUTHOR: Novikov, M. M.; Gurvich, L. V. 44,55 44,55 71,44,65

TITLE: A new study of the emission spectrum of the SrCl molecule

SOURCE: Optika i spektroskopiya, v. 19, no. 1, 1965, 143-145

TOPIC TAGS: strontium compound, chloride, emission spectrum, band spectrum, optic transition, dissociation constant

ABSTRACT: One of the aims of the study was to obtain in emission the same systems of bands that were previously observed in absorption only, and thereby determine more accurately the constants of the molecule under investigation. The radiation source was an uncondensed discharge in a tube (H. Schuller, Spectrochim. Acta v. 4, 85, 1950), with an electrically heated capillary (140 mm long and 5 mm in diameter). The discharge voltage and current were 3--4 kv and 1.5 - 2 a. The spectra were photographed with a high-transmission spectrograph with STE-1 diffraction grating. The emission spectrum was found to contain all six previously known band systems, as well as additional bands, including some with vibrational quantum numbers larger than those reported earlier. The dissociation energies, frequencies, and vibrational constants of the transitions are calculated. Orig. art. has: 5 formulas and 1 table.

ASSOCIATION: None

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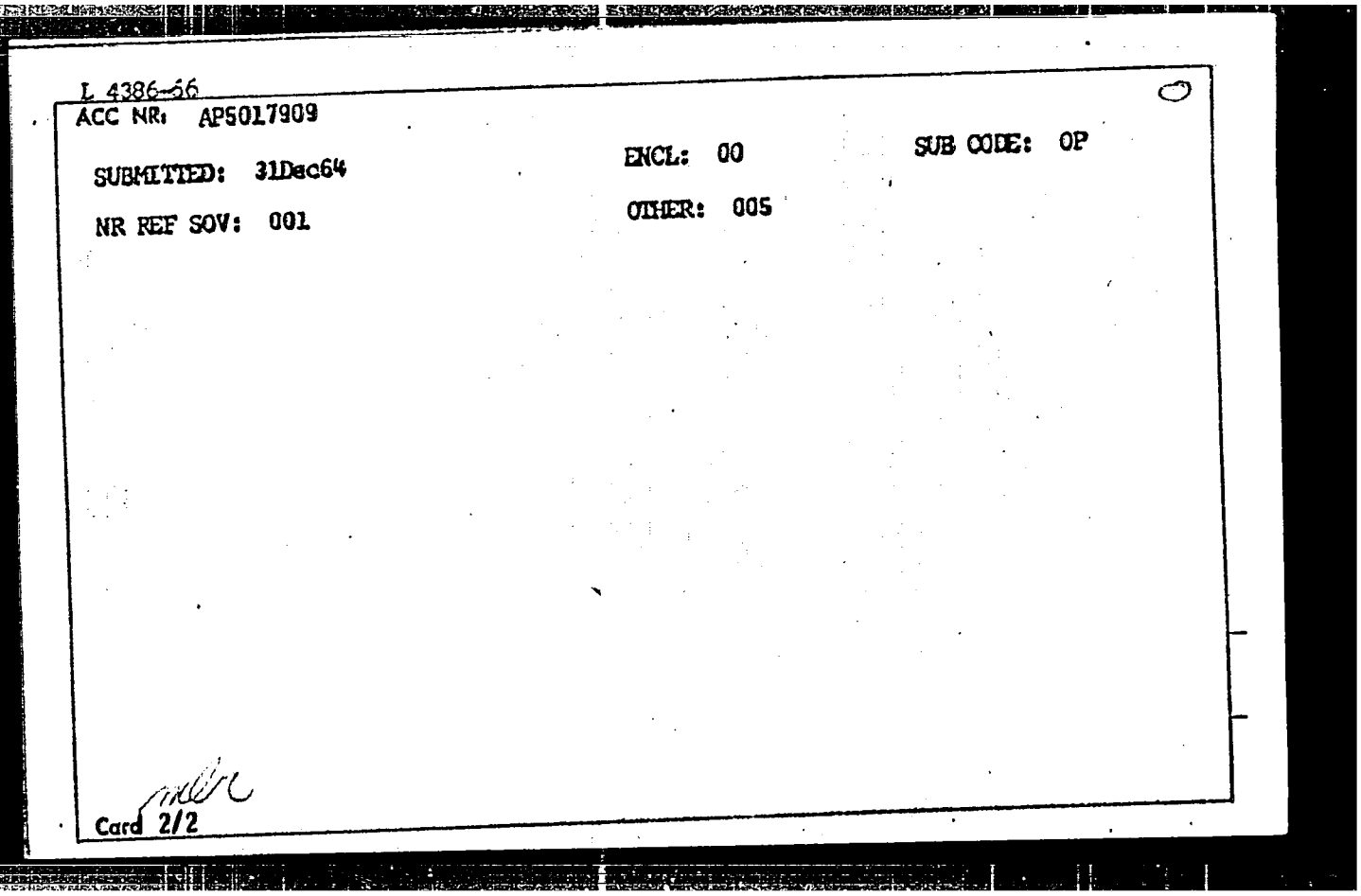

L 4386-66
ACC NR: AP5017909

SUBMITTED: 31Dec64 ENCL: 00 SUB CODE: OP

NR REF SOV: 001 OTHER: 005

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